

CLAIMS

What is claimed is:

1. A blind threaded insert installation tool, comprising:

a body having a nosepiece;

the nosepiece including an insert head support anvil having an expandable mandrel assembly projecting forwardly therefrom for engaging a fastener insert having an internally-threaded bore;

the expandable mandrel assembly comprising an elongate mandrel rod having an internal axial bore and threads along an outside surface thereof with means for moving said mandrel rod radially from a collapsed state to an expanded state; and

means for extending forward and retracting backward said mandrel rod assembly from said anvil and for moving said mandrel rod to a fully extended position.

2. The tool of claim 1 wherein said mandrel rod is radially segmented comprising a plurality of radially movable segments.

3. The tool of claim 2 wherein said means for moving said mandrel rod from the collapsed state to the extended state lies within the axial bore of the mandrel rod.

4. The tool of claim 3 wherein said means for moving said mandrel rod between the collapsed and expanded states is an axially movable spreading pin including a substantially conical wedge surface engageable with inner walls of said mandrel rod segments.

5. The tool of claim 4 further including means for resiliently biasing said mandrel rod segments toward the collapsed state.

6. The tool of claim 5 wherein means for extending and retracting said rod from the

1 anvil is a pneumatic cylinder.

2 7. The tool of claim 6 wherein the number of mandrel rod segments is four.

3 8. The tool of claim 5 wherein said means for resiliently biasing said segments toward
4 the collapsed state is a garter assembly.

5 9. The tool of claim 8 wherein the means for axially moving said spreading pin is a
6 hydraulic cylinder.

7 10. The tool of claim 4 further including actuator means for moving said spreading pin
8 forward and backward.

9 11. The tool of claim 2 including a plurality of axially extending radial slots lying
10 between each mandrel segment.

11 12. The tool of claim 9 wherein said spreading pin includes a cylindrical wall portion
12 for locking said pin in the expanded state whereby an inward radial force applied to the mandrel
13 rod segments does not cause an axial force on said spreading pin.

14 13. The tool of claim 1 further including means to adjust the axial position of the anvil
15 relative to the mandrel rod when it is in its fully extended position.